

1 REMARKS

2 Status of the Claims

3 Claims 1 – 44 remain pending in the present application. Applicants have amended Claims 1,  
4 2, 10, 13, 14, 16, 17, 23, 26, 29, 33, 34, and 43 to more clearly distinguish over the prior art cited by  
5 the Examiner.

6 Claims Rejected under 35 U.S.C. § 102(b)

7 Claims 29-32, 1 through 8, 11, and 13 are rejected as anticipated by U.S. Patent  
8 No. 4,794,459 (Moberg et al.). In connection with Claim 23, the Examiner asserts that Moberg  
9 discloses a columnar focusing indicator for a manually focused video camera that indicates sharpness  
10 of focus, generally as recited by applicants' claim. However, as amended, Claim 23 and each of the  
11 other independent claims in this application clearly distinguish over the prior art cited by the  
12 Examiner.

13 To more clearly understand how the amendment to each independent claim  
14 distinguishes over the cited prior art, it is important to understand how Moberg determines the  
15 sharpness of an image to control the focusing indicator provided on the right side of the  
16 viewfinder, in contrast to the invention recited by applicants' claims. Moberg teaches that a  
17 subject is imaged upon an image sensor 2, which produces a video signal. A luminance signal  
18 derived from the video signal is channeled through a focusing aid circuit 8 to a  
19 monochrome electronic viewfinder 9. Focusing aid circuit 8 generates a DC control  
20 signal having a magnitude corresponding to high-frequency content of the luminance signal.  
21 Moberg states that the greater the high-frequency content, the smaller will be the amplitude of  
22 the control signal. The control signal, which is thus a electrical current, is applied to a  
23 capacitor and accumulated over each video field. When the accumulated control signal  
24 reaches a predetermined fixed threshold, the DC level of the video signal is shifted so that the  
25 focusing indicator changes from a dark level to a bright level to indicate that the image is  
26 focused. (See col. 3, line 63 – col. 4, line 7 of Moberg). Accordingly, it will be apparent that  
27 the focusing indicator provided by Moberg specifically responds to the *high-frequency*  
28 *content* of the luminance signal component of the video signal that is output from the image  
29 sensor.

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1 In contrast, Claim 23 now recites that a luminance value is determined for each of a  
2 plurality of pixels comprising the image data, and that the sharpness value is determined *based*  
3 *on differences in luminance of the plurality of pixels comprising the image*. Moberg clearly  
4 does not teach or suggest controlling the focus indicator based upon differences in luminance of  
5 pixels comprising an image, but instead, teaches that the columnar indicator provides an  
6 indication of focus in response to the high frequency content of the luminance signal component.  
7 Figure 3 of Moberg shows a high-frequency detector 16, which is discussed at column 5,  
8 lines 20 – 50. This section of Moberg explains how the high-frequency content of the luminance  
9 signal is used to control the focus indicator of Moberg. Based upon this explanation, it is clearly  
10 apparent the Moberg does NOT teach controlling focus indication in the manner claimed by  
11 applicants, for aiding a user in manually focusing a camera. Therefore, it should be apparent that  
12 Claim 23 distinguishes over the prior art cited by the Examiner and is therefore patentable. The  
13 same comment applies to all of the other independent claims as now amended.

14 With the intent of reducing the complexity of the issues for the Examiner to consider in this  
15 response, the following discussion focuses on the independent claims. The patentability of each  
16 remaining dependent claim is not necessarily separately addressed in detail. However, applicants'  
17 decision not to discuss the differences between the cited art and each dependent claim should not be  
18 considered as an admission that applicants concur with the Examiner's conclusion that these  
19 dependent claims are not patentable over the disclosure in the cited references. Similarly, applicants'  
20 decision not to discuss differences between the prior art and every claim element, or every comment  
21 made by the Examiner, should not be considered as an admission that applicants concur with the  
22 Examiner's interpretation and assertions regarding those claims. Indeed, in view of the amendments  
23 entered above, applicants believe that all of the dependent claims patentably distinguish over the  
24 references cited. However, a specific traverse of the rejection of each dependent claim is not  
25 required, since dependent claims are patentable for at least the same reasons as the independent  
26 claims from which the dependent claims ultimately depend.

27 In rejecting Claim 29, the Examiner indicates that Moberg discloses "determining a  
28 luminance value for pixels comprising the image," with reference to Moberg's teaching that "focus  
29 aid circuit 8 uses luminance signals from image signals provided by circuit 6." He further notes that  
30 Moberg teaches "comparing the luminance value of pixels that are adjacent to each other to

1 determine differences in their luminance values,” with reference to Moberg’s teaching that  
2 “according to an in-focused image, a magnitude of high-frequency content of pixels along the edge of  
3 an object image is higher than the other pixels of the object is used for focusing values; in other  
4 words, focus aid circuit 8 compares the pixels along the edges of an object with the other ones.” (The  
5 Examiner refers to col. 3, lines 56 – 68, and col. 9, lines 10 – 40 of Moberg.) Finally, the Examiner  
6 indicates that focus aid circuit 8 determines the focusing value in accordance with the high frequency  
7 content of luminance signals, in concluding that Moberg teaches “determining the sharpness value as  
8 a function of the differences in the luminance values.” Applicants respectfully disagree with the  
9 Examiner’s characterization and interpretation of Moberg’s teachings.

10 While it is true that Moberg determines the high-frequency content of a luminance signal to  
11 provide a control signal used to control a focus indicator, Moberg does NOT teach comparing the  
12 luminance values of pixels that are adjacent to each other to determine differences, in order to  
13 indicate sharpness of an image. In Moberg, the brightness of a segment within the column that serves  
14 as a focusing indicator is controlled to indicate whether an image is focused, but the luminance of  
15 pixels within the image is not determined in order to evaluate focusing, as is the case in applicants’  
16 claimed invention. Moberg determines the sharpness of an image based only upon the high-  
17 frequency content within a central window 9b of the image. Contrary to the Examiner’s assertion,  
18 subparagraph (c) of Claim 29, which refers to “determining the sharpness value as a function of the  
19 differences in the luminance values” is not in any way equivalent to determining a focus value in  
20 accordance with the high-frequency content of luminance signals. Thus, it appears that the Examiner  
21 has misconstrued the teaching of Moberg in concluding that Moberg anticipates Claim 29. The  
22 Examiner’s apparent misunderstanding of how Moberg’s invention operates compared to the  
23 recitation of applicants’ claims has caused Claim 29 and other claims, such as Claims 31-32, which  
24 relate to the use of luminance values in determining the sharpness of focus of an image, to be  
25 improperly rejected. Indeed, it is this substantial difference between the approach used by Moberg  
26 and by the present claimed invention to detect whether an image is in focus that has led to applicants’  
27 amendment of the independent claims in this application so as to more clearly distinguish over  
28 Moberg.

29 Claim 31 provides that “the processor determines a running total of the differences in at least  
30 one of a horizontal and a vertical direction.” In rejecting this claim, the Examiner states that

1 Moberg's focusing aid circuit "determines pixels which is (*sic*) arranged in horizontal and vertical  
2 directions of image sensor 2." Clearly, there is no relationship between this teaching in Moberg and  
3 the running differences (in luminance) of pixels, as recited by applicants in Claim 31. Similarly, in  
4 rejecting Claim 32, which recites that "the logic device weights the difference in the luminance for  
5 pixels in at least one predefined portion of the image, when determining the sharpness value," the  
6 Examiner simply indicates that "window 9b is used for processing a focusing value." Again, Moberg  
7 does not teach or disclose determining a luminance difference, and this prior art reference clearly  
8 does not teach or suggest weighting the difference in the luminance for pixels to determine a  
9 sharpness value.

10 In rejecting method Claims 2-7, the Examiner relies upon the same arguments used in  
11 rejecting Claims 29-32, 25, and 26, respectively. Accordingly, it is applicants' position that  
12 Claims 2-7 are patentable over Moberg for the same reasons noted above in regard to these other  
13 claims.

14 Claims Rejected over 35 U.S.C. § 103(a)

15 Claims 27, 28, 9, 10, 12, 14, 15, 33-40, 41-44 are rejected as unpatentable over Moberg.  
16 In regard to Claim 27, the Examiner acknowledges that Moberg does not explicitly teach or  
17 suggest any audio indicator. Specifically, Claim 27 recites "wherein the audio indicator produces  
18 an audible sound having a frequency that is indicative of sharpness value." However, the  
19 Examiner relies upon Official Notice that audible sound is used as a warning indication. Even if  
20 *arguendo*, audible sound is used as an indicator of other conditions, there is no reason why one of  
21 ordinary skill would know to use an audible sound as an indication of the state of a visual  
22 parameter, such as the focus of an image. Furthermore, the Examiner's reasoning does not take  
23 into consideration the specific recitation of this claim, which provides that the frequency of the  
24 sound is indicative of sharpness of an image focus. Further, since Moberg displays a focus  
25 indicator in a viewfinder, there is no reason why one of ordinary skill would be motivated to  
26 provide an audible sound to indicate sharpness of focus, since the user would already be  
27 observing the focus indicator when viewing an image through the viewfinder. Therefore, this  
28 rejection is not justified, and the claim is patentable.

29 The rejection of Claim 28 relies upon Official Notice "that a video camera is connected to a  
30 computer including a display to view an image from the camera." However, this claim further recites

1 that "at least one of the logic device and the indicator are disposed" in a host computing device.  
2 Applicants can see no reason why one of ordinary skill would understand that the host computer,  
3 although it may be connected to a camera to view an image in accord with known prior art, would  
4 include either an indicator of image focus, or a logic device used to determine image focus.  
5 Accordingly, this rejection is also unjustified and should be withdrawn, since Claim 28 is patentable  
6 over the art cited.

7 Claim 9 recites that the step of providing an indication "comprises the step of producing an  
8 audible sound indicative of the user achieving the sharpest focus as the user focuses the camera."  
9 The Examiner rejects this claim simply by indicating that it corresponds to apparatus Claim 27.  
10 Although using an audible sound as a warning might be known in the art, there is no reason to  
11 conclude that it is well known to use an audible sound to indicate when a user has manually focused a  
12 camera so as to achieve the sharpest focus. Claim 27 indicates that the frequency indicates the  
13 sharpness of focus. Thus, as the user manually adjusts the focus, for example, a rising frequency can  
14 indicate that the user is achieving a sharper focus, but if the frequency then starts to drop, the user  
15 will be alerted that the manual focus adjustment has been turned or moved too far and that the  
16 adjustment direction should be reversed until the highest frequency audible sound is again achieved.  
17 Applicants know of no prior art that teaches such a function. Accordingly, both Claims 9 and 27 are  
18 patentable over the art of record.

19 Official Notice is again taken in the rejection of Claim 10, and Examiner indicates thereby  
20 that it is well known to connect a video camera to a computer so that the computer can process  
21 raw image data from the camera. However, Claim 10 expressly states that the host computing  
22 device carries out "the step of processing the image data," which refers to the details recited for  
23 this step in Claim 1, subparagraph (a). But, these details are not well-known for those of  
24 ordinary skill and do not simply provide for processing raw image data *per se*. Moberg discloses  
25 processing the image data to determine high-frequency content using a logic circuit within the  
26 camera, and there is no teaching or suggestion in Moberg of any step comparable to that defined  
27 by applicants in their claims for processing luminance data, either in a camera or on a computing  
28 device. Accordingly, Claim 10 also defines a novel and nonobvious invention and is therefore  
29 patentable.

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1 Method Claim 12 is rejected for the same reason as apparatus Claim 27 and is therefore  
2 patentable for the same reasons noted above in regard to applicants' traverse of the rejection of  
3 Claim 27.

4 In rejecting Claim 14, the Examiner again relies upon Official Notice for "a method of  
5 determining a weighted average of luminance for different region (*sic*) of the image." Again,  
6 applicants' claims have recited specific details in regard to processing image data in regard to  
7 differences in luminance, for the specific purpose of controlling an indicator of image focus, and  
8 these details are not well-known to one of ordinary skill in the art. Moberg does not teach or  
9 suggest determine luminance and would have no reason to determine a weighted average of  
10 luminance in different regions of an image, since Moberg relies upon the high frequency content  
11 of luminance data to control a focus indicator. Therefore, simply citing Moberg and taking  
12 Official Notice that a computer can process image data is not sufficient justification for rejecting  
13 this claim, and the claim is clearly patentable over the art cited.

14 The Examiner rejects independent Claim 33, which is directed to a logic device-readable  
15 medium, for the same reasons as Claim 15, i.e., for the same reasons as he rejected Claim 1.  
16 However, for the same reasons argued by applicants in traversing the rejection of Claim 23, each of  
17 these claims are also patentable over the art cited.

18 Claims 34-40 are rejected for the same reasons as Claims 2-8. Similarly, for the reasons  
19 noted above in regard to Claims 2-8, Claims 34-40 are also patentable.

20 Claims 16-22 are rejected as unpatentable over Mizumura in view of Moberg. In regard to  
21 Claim 16, the Examiner notes that Figures 5 and 6 of Mizumura, disclose "a TV camera lens  
22 controller assisting a user to manually focus," using a personal computer and monitor. The Examiner  
23 acknowledges that Mizumura fails to disclose any of the steps of the claim, but relies upon Moberg  
24 for teaching the steps. However, for the reasons already noted above in the discussion traversing the  
25 rejection of Claim 23, Moberg fails to disclose these steps. Accordingly, Claim 16 is also patentable  
26 over the art cited.

27 In consideration of the remarks presented above, it should be apparent that each  
28 independent claim in this application clearly distinguishes over the art cited by the Examiner and  
29 is therefore neither anticipated nor obvious in view of such art. Further, since each dependent  
30 claim is patentable for at least the same reasons as the independent claim from which that claim

1 ultimately depends, all dependent claims are there for patentable over the part of record.  
2 Accordingly, the Examiner is requested to pass this case to issue without further delay. In the  
3 event that any further question remains, the Examiner is requested to telephone applicants'  
4 attorney at the number given below.

5  
6 Respectfully submitted,

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9

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12 RMA:lrg

13  
14 MAILING CERTIFICATE

15 I hereby certify that this correspondence is being deposited with the U.S. Postal Service in a sealed  
16 envelope as first class mail with postage thereon fully prepaid addressed to: Commissioner for Patents,  
17 Alexandria, VA 22313-1450, on March 1, 2005.

18 Date: March 1, 2005

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